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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MITCHELL, KATHERINE W	

ART UNIT	PAPER NUMBER
3677	

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/724,560	GROSCH, GREGORY E.	
	Examiner	Art Unit	
	Katherine W. Mitchell	3677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on *26 November 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Examiner has not restricted the method from the apparatus, as the method steps would be allowable once the apparatus claims are allowed, and the only recited method steps are providing the fastener and screwing the fastener into the wall. Should additional method steps be added, the method claims may be restricted.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the nib (claim 9), adhesive first nd second parts (Claim 6), composite wall (claims 13-17) and a boat (claim 16) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claim 13 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 18 of copending Application No. 10/741279. Although the conflicting claims are not identical, they are not patentably distinct from each other because they claim a method of assembling a structure with a composite wall comprising screwing a self-drilling fastener having pre-applied, self-curing adhesive on the threads into the composite wall. While claim 13 does not require the tip be at least 2 mm from the threads, It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have specified a minimum distance or range of distances between the tip and

the threads, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Examiner takes Official Notice that it is well known that self-drilling tips are not threaded and would thus have a gap between the tip and the threads, as evidenced by the patents applied below as art in this case.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> **A person shall be entitled to a patent unless –**
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2,6,8,9 are rejected under 35 U.S.C. 102(b) as being anticipated by Nystrom USP 5746039.

Re claim 1: Nystrom teaches a threaded fastener having a self-drilling tip (55 in Fig 4, col 4 lines 17-27, col 1 lines 42-44) and threads holding a substantially dry self-curing adhesive (col 3 lines 56-col 4 line 2. NOTE: Further details are available in col 3 lines 41-51 and Fig 1 of INCORPORATED BY REFERENCE TOBACK et al USP 5304023).

Re claim 2: Nystrom teaches that the tip is distanced from the threads by at least 0.5 cm in Table 1, col 3, which shows that L_1 is .270 inches, and L_1 is shown as this distance in Fig 4.

Re claims 5- 6: Nystrom teaches by INCORPORATED BY REFERENCE TOBACK et al USP 5304023 which teaches in col 3 lines 48-50 that the curable adhesive can be a 2 part epoxy which inherently hardens when mixed. Two part epoxy resin that is sprayed or dripped on is inherently microencapsulated, as once the parts contact each other the formed resin begins to harden; this it is critical to keep the 2 parts separated by microencapsulation until ready for the adhesive to harden.

Re claim 8: Nystrom teaches threads disposed about a shank and a load bearing head at the end of the shank in Fig 3.

Re claim 9: As shown in Fig 1,3, and 4, the head has a recess 26 such that the outer portion of the underside can be considered to form a nib:

nib (nĭb) *noun*
2. *A sharp point or tip.* [1]

6. Claims 1, 4-6, 8,9,13 are rejected under 35 U.S.C. 102(b) as being anticipated by Toback et al. USP 5304023, hereafter called Toback.

Re claim 1: Toback teaches a threaded fastener 10 having a self-drilling tip (col 1 lines 65-58) and threads 40 holding a substantially dry self – curing adhesive (Col 3 line 41- 51 and Fig 1).

Re claim 4: Absent any further definition, thedual fluted drill tip type arrangement (col 1 lines 67-68) is considered a pinch-point configuration (Fig 6).

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[1]Excerpted from *The American Heritage Dictionary of the English Language, Third Edition* Copyright © 1992 by Houghton Mifflin Company. Electronic version licensed from Lernout & Hauspie Speech Products N.V., further reproduction and distribution restricted in accordance with the Copyright Law of the United States. All rights reserved.

Re claims 5-6: Two part epoxy resin that is sprayed or dripped on is inherently microencapsulated, as once the parts contact each other the formed resin begins to harden; this it is critical to keep the 2 parts separated by microencapsulation until ready for the adhesive to harden.

Re claim 8: Fig 1 shows a load bearing head and threads disposed about a shank.

Re claim 9: As shown in Fig 1 and 4, the head has a recess 26 such that the outer portion of the underside can be considered to form a nib.

Re claim 13: Toback teaches a method of assembling a structure having a metal wall, comprising providing the threaded fastener of claim 1 (See claim 1 above) and screwing the fastener to the wall (col 4 lines 8-34). Examiner notes that Toback teaches a metal wall, not a composite wall, but it has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. *Ex parte Pfeiffer*, 1962 C.D. 408 (1961).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nystrom.

Re claim 3; Nystrom teaches a fastener as disclosed, but does not teach that the tip is distanced by at least 1 cm from the threads. In a 1.187 inch shank length fastener, Nybeck has the distance of .270 inches. Examiner takes Official Notice that screws of 1.5 or more inches are well known and commonly used in the art, depending on the thickness of the items to be connected and the strength required of the connection. It would have been an obvious matter of design choice to change the size to a 1.5" or longer screw and keep the same proportions, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Re claim 7: Nystrom teaches a fastener as disclosed, but does not teach that the threads comprise stainless steel. Examiner takes Official Notice that fasteners with stainless steel threads are well-known in the art and used when corrosion is likely to be a problem and/or when appearance is important. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have made the threads of stainless steel, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

9. Claims 2- 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toback. Toback teaches a fastener as disclosed, but does not teach that the tip is distanced by at least 0.5 or 1 cm from the threads. Toback teaches in col 3 lines 35-40 that a 1 inch shank length screw with a tip diameter of .134" is known, and Figs 1 and 4

are clear that the unthreaded section is at least as long, if not longer than, the tip diameter. Examiner takes Official Notice that screws of 1.5 or 3 or more inches are well known and commonly used in the art, depending on the thickness of the items to be connected and the strength required of the connection. It would have been an obvious matter of design choice to change the size to a 1.5" or 3" or longer screw and keep the same proportions, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Re claim 7: Toback teaches a fastener as disclosed, but does not teach that the threads comprise stainless steel. Examiner takes Official Notice that fasteners with stainless steel threads are well-known in the art and used when corrosion is likely to be a problem and/or when appearance is important. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have made the threads of stainless steel, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

10. Claims 10-11 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toback and Applicant's admitted prior art.

Re claim 10: As discussed with respect to claim 1 above, Toback teaches all the elements except high-low threads, which applicant has defined as threads of alternating height so the separated upper and lower threads of Nystrom are not considered High-low threads. Applicant has admitted in Paragraph [0004] of the pending application:

> *It is known that these problems can be reduced by pre-drilling or pre-forming a cavity into a FRP composite. In such instances the installer must then use a fastener with a major diameter (the measurement of the greatest outside diameter of the threads), that is only slightly greater than the diameter of cavity. Commonly used sheet metal screws for such applications often have sharp points and type "A" or "AB" threads. Such screws can also have a tapered point and type 25, "B", rolling or high-low threads, high-low threaded fasteners alternate one high and one low thread along the shank of the fastener. They were originally designed for connections in plastic material to reduce cracking, and are also somewhat effective in improving connections in wood and sheet metal.*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to use high-low threads as taught by applicant's admitted prior art, in order to improve connections in Toback's sheet metal connection application.

Re claims 11 and 14-16: As discussed above, a two-part epoxy on a fastener shaft inherently is microencapsulated.

Further Re claims 14-16: Toback teaches a method of assembling a structure having a metal wall, comprising providing the threaded fastener of claim 11 (See claim 11 above) and screwing the fastener to the wall (col 4 lines 8-34). Examiner notes that Toback teaches a metal wall, not a composite wall, or composite fiberglass wall, or that the structure is a boat, but it has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. *Ex parte Pfeiffer*, 1962 C.D. 408 (1961).

11. Claims 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toback in view of Applicant's admitted prior art and common knowledge in the art.

Re claims 12 and 17: As discussed with respect to claims 1 and 5 above, Toback teaches a fastener as disclosed, but does not teach that the tip is distanced by

at least 1 cm from the threads or that the threads have a high-low configuration. Toback teaches a fastener as disclosed, but does not teach that the tip is distanced by at least 0.5 cm from the threads. Toback teaches in col 3 lines 35-40 that a 1 inch shank length screw with a tip diameter of .134" is known, and Figs 1 and 4 are clear that the unthreaded section is at least as long, if not longer than, the tip diameter. Examiner takes Official Notice that screws of 1.5 or more inches are well known and commonly used in the art, depending on the thickness of the items to be connected and the strength required of the connection. It would have been an obvious matter of design choice to change the size to a 1.5" or longer screw and keep the same proportions, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Further, applicant has admitted that high-low threads are well-known in the art in Paragraph [0004] of the pending application:

> *It is known that these problems can be reduced by pre-drilling or pre-forming a cavity into a FRP composite. In such instances the installer must then use a fastener with a major diameter (the measurement of the greatest outside diameter of the threads), that is only slightly greater than the diameter of cavity. Commonly used sheet metal screws for such applications often have sharp points and type "A" or "AB" threads. Such screws can also have a tapered point and type 25, "B", rolling or high-low threads, high-low threaded fasteners alternate one high and one low thread along the shank of the fastener. They were originally designed for connections in plastic material to reduce cracking, and are also somewhat effective in improving connections in wood and sheet metal.*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to further modify Toback in view of common knowledge in the art

to further include high-low threads as taught by applicant's admitted prior art, in order to improve connections in Toback's sheet metal connection application.

Further Re claim 17: Toback teaches a method of assembling a structure having a metal wall, comprising providing the threaded fastener of claim 12 (See claim 12 above) and screwing the fastener to the wall (col 4 lines 8-34). Examiner notes that Toback teaches a metal wall, not a composite wall, but it has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. *Ex parte Pfeiffer*, 1962 C.D. 408 (1961).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine W. Mitchell whose telephone number is 703-305-6713. The examiner can normally be reached on Mon - Thurs 10 AM - 8 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J. Swann can be reached on 703-306-4115. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

14. Note that examiner will have a new phone number after March 31, 2005:

(571)272-7069.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Katherine W Mitchell
Examiner
Art Unit 3677

Kwm
3/23/2005